Complete Summary

GUIDELINE TITLE

Guidelines for the clinical application of laparoscopic biliary tract surgery.

BIBLIOGRAPHIC SOURCE(S)

Guidelines for the clinical application of laparoscopic biliary tract surgery. Society of American Gastrointestinal Endoscopic Surgeons. Surg Endosc 2000 Aug;14(8):771-2. [10 references]

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

- Symptomatic cholelithiasis
- Choledocholithiasis

GUIDELINE CATEGORY

Treatment

CLINICAL SPECIALTY

Surgery

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

To update and revise guidelines published in 1990 for the performance of laparoscopic biliary tract surgery.

TARGET POPULATION

Adults with symptomatic gallstones

INTERVENTIONS AND PRACTICES CONSIDERED

Laparoscopic cholecystectomy (LC) with conversion to an open procedure, if necessary.

Management options for choledocholithiasis:

1. Open common bile duct exploration (CBDE)
2. Laparoscopic CBDE (LCBDE) either via the cystic duct or via choledochotomy
3. Post-LC endoscopic sphincterotomy
4. Observation (only for very small CBD stones)

MAJOR OUTCOMES CONSIDERED

Not stated

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The guideline developer performed a MEDLINE search.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Not stated

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

This statement was reviewed and approved by the Board of Governors of the Society of American Gastrointestinal Endoscopic Surgeons (SAGES).

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The Role of the General Surgeon

It is the opinion of Society of American Gastrointestinal Endoscopic Surgeons (SAGES) that for optimum quality of care, laparoscopic biliary tract surgery must be performed by surgeons who are qualified to perform open biliary tract surgery. Only such surgeons possess the skill and judgment required to perform these procedures safely. Only such surgeons can determine which patients require conversion to an open procedure and are then capable of performing that open procedure.

Operative Setting

Laparoscopic biliary tract surgery should be performed in the operating room with appropriate equipment and personnel for both laparoscopic and open operations. A well-trained operating room team is essential.

Equipment

The use of up-to-date video equipment and instrumentation designed to perform laparoscopic biliary tract surgery is important. Every member of the team must be able to observe the operation comfortably.

Technique

The principles of the technique for laparoscopic cholecystectomy (LC) are well established and have been extensively documented (Hunter, 1993). Several points are worthy of emphasis:

- Pneumoperitoneum may be established using closed or open technique
- The cystic duct should be identified at its junction with the gallbladder
- Traction of the gallbladder infundibulum should be lateral rather than cephalad
- Meticulous dissection of the cystic duct and cystic artery are essential
- All energy sources can cause occult injury
- Perforations of the gallbladder should be closed when possible to prevent loss of stones
- Stones that escape from the gallbladder should be retrieved if possible
- Liberal use of operative cholangiography is desirable to discover surgically important anomalies, clarify difficult anatomy and to detect common bile duct stones (Sackier et al., 1991)
- The surgeon should not hesitate to convert to an open operation for technical difficulties, anatomic uncertainties, or anatomic anomalies, especially in cases of acute cholecystitis

Indications and Relative Contraindications

The indications for LC are the same as for open cholecystectomy. There are few absolute contraindications. Relative contraindications include cirrhosis, coagulopathy, pancreatitis, pregnancy, morbid obesity, and severe cardiorespiratory insufficiency. The ability to safely perform a procedure depends on the surgeon´s experience and the ability to manage potential problems (Soper, 1993).

Postoperative Management

LC is a major abdominal operation usually performed under general anesthesia. When compared to open cholecystectomy, LC may shorten hospitalization and return to normal activities.

Following LC, the patient should be closely observed in a post-anesthesia care unit. The surgeon may perform LC as a same-day, out-patient procedure. Standard of care requires that decisions regarding inpatient versus outpatient convalescence must be made on a case by case basis by the surgeon. Bile leak or other complication should be suspected in any patient who is not recovering satisfactorily in 24-48 hours (Morgenstern, Berci, & Pasternak, 1993). Prompt investigation [e.g. Ultrasound, computed tomography (CT) scan and HIDA scan, endoscopic retrograde cholangiography (ERC)] is usually indicated.

Choledocholithiasis

The optimum management of choledocholithiasis is dependent on the resources of the institution and the skill and experience of the available consultants (Perissat, et al. 1994). ERC is not routinely required prior to LC. However, if common bile duct (CBD) stones are detected by ERC, they should be removed endoscopically, if possible (Neoptolemos, Carr-Locke, & Fossard, 1987). Normally, ERC and sphincterotomy (ES) should be followed within several days by LC. Failure to remove CBD stones endoscopically requires subsequent surgical removal either at open operation or laparoscopically. If CBD stones are confirmed on intraoperative cholangiography during LC, some options available to the surgeon include (Berci & Morgenstern, 1994):

1. Open CBD exploration (CBDE)
2. Laparoscopic CBDE (LCBDE) either via the cystic duct or via choledochotomy
3. Post-LC ES
4. Observation (only for very small CBD stones)
5. Cystic Duct Drainage (Allows drainage and access to the duct)

The choice will depend upon the relative skills of the surgeon and endoscopist and on the available equipment and resources.

(LCBDE) is a complex laparoscopic/endoscopic biliary procedure that demands a well-trained operating room team and facilities and equipment beyond that required for routine LC (Berci & Cushieri, 1997). Up-to-date equipment especially designed to perform safe LCBDE is essential. The surgeon should have suitable guidewires, balloon catheters, flexible endoscopes, and their appropriate accessories.

The ability to remove CBD stones laparoscopically will depend on the surgeon's experience, the anatomy, the cystic duct size, the size and location of the stones, and the diameter of the CBD. Stones up to 7 or 8 mm can usually be removed via the cystic duct. A choledochotomy is usually required for larger stones. Performance of a choledochotomy requires that the surgeon be skilled in laparoscopic suturing techniques.

The indications and contraindications for LCBDE are identical to those for open CBDE.

Other Biliary Tract Procedures

Additional laparoscopic procedures on the biliary tract have been performed e.g. cholecystojejunostomy. Only surgeons with considerable experience in laparoscopic surgery, and who are skilled in laparoscopic suturing techniques should perform these complex procedures.

Patient Consent

The patient must consent to possible conversion to an open procedure. Such a conversion is not to be viewed as a complication of surgery.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Preliminary evidence suggests that when compared to open cholecystectomy, laparoscopic cholecystectomy (LC) may shorten hospitalization and return to normal activities.

POTENTIAL HARMS

Occult injuries may be caused by any energy source used during the procedure (e.g., laser, electrosurgical).

CONTRAINDICATIONS

CONTRAINDICATIONS

Relative contraindications to laparoscopic cholecystectomy include cirrhosis, coagulopathy, pancreatitis, pregnancy, morbid obesity, and severe cardiorespiratory insufficiency.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1990 (updated 1999)

GUIDELINE DEVELOPER(S)

Society of American Gastrointestinal Endoscopic Surgeons - Medical Specialty Society

SOURCE(S) OF FUNDING

Society of American Gastrointestinal Endoscopic Surgeons (SAGES). No outside funding sources were used.

GUIDELINE COMMITTEE

Committee on Standards of Practice

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline. It is an update of a guideline previously issued in 1990.

An update is not in progress at this time.

GUIDELINE AVAILABILITY

Electronic copies: Available from the Society of American Gastrointestinal Endoscopic Surgeons (SAGES) Web site.

Print copies: Available from the Society of American Gastrointestinal Endoscopic Surgeons (SAGES), 2716 Ocean Park Boulevard, Suite 3000, Santa Monica, CA 90405; Web site: www.sages.org.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on November 19, 1999. The information was verified by the guideline developer on February 15, 2000.

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Date Modified: 11/15/2004